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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,576	07/24/2003	Chetan Singh Solanki	IMEC292.001AUS	2996

20995 7590 04/05/2005

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EXAMINER
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NGUYEN, TUAN H

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/627,576	<b>Applicant(s)</b> SOLANKI ET AL.	
	<b>Examiner</b> Tuan H. Nguyen	<b>Art Unit</b> 2813	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/03, 3/05</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election without traverse of Group II, claims 1-8, 14-21 in the reply filed on 1/13/05 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Faris (US 2002/0171080).

See Faris, figs. 1-32 and related text which discloses the claimed method for manufacturing a thin film device including a solar cell (paragraph [0062]) comprising fabricating a device on a free standing thin film region 3 (note in figs. 2-3, and

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paragraph [0039] which discloses weak bond region 5 left untreated, paragraph [0043], lines 9-10 teaches weak bond region approach zero, and paragraph [0049], last two lines discloses that layers 1 and 2 do not bond at the weak bond region 5); removing the thin film device from an intermediate substrate 2 after fabrication, and depositing the thin film device layer 1 on a handle substrate (paragraph [0074]).

With respect to claim 17, see paragraph [0071], last two lines which discloses the substrate 2 comprises glass.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 14-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Background of the Invention in view of Faris (US 2002/0171080).

Background of the Invention, pages 1-2, 6-7 and related figs. 1A-1H teaches substantially the claimed method for forming a solar cell including the steps of forming a porous semiconductor layer 2 in the form of thin film on an original substrate 3 (fig. 1A-1B); separating the thin film by a lift-off process from the original substrate 3 (fig. 1D); fabricating an active device 6 by Chemical Vapor Deposition on top of the thin film; and attaching the device on the thin film to a foreign substrate 8 (figs. 1F-1H).

With respect to claim 8, see the instant Background of the Invention, paragraph [0005]).

Background of the invention fails to teach the use of a dummy support for fabricating the active device before transferring the device to a foreign substrate.

Ferris, in a related method for forming a semiconductor device as shown in figs. 1-32 and related text which discloses the transferring of thin film region 3 to a dummy support layer 2 for a subsequence of forming a device on a free standing thin film region 3, thin film region 3 not being attached to the dummy support 2 (note in figs. 2-3, and paragraph [0039] which discloses weak bond region 5 left untreated, paragraph [0043], lines 9-10 teaches weak bond region approach zero, and paragraph [0049], last two lines discloses that layers 1 and 2 do not bond at the weak bond region 5); fabricating a device including solar cell, on top of the film region 3 (paragraph [0062]); removing the thin film device from an intermediate substrate 2 after fabrication, and depositing the thin film device layer 1 on a handle substrate (paragraph [0074]).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used dummy support for forming a device as suggested by Ferris in the conventional process for forming a solar cell as disclosed in the Background of the Invention to enhance the device performance, reliability, as well as to reduce material and labor cost associated with the manufacture thereof (see Ferris, Background of the Invention).

With respect to claim 2, it would have been obvious to one having ordinary skill in the art at the time the invention as made to have formed the solar cells on both side of the thin film for improving in output voltage in a small size, high density modules, production efficiency, high quality and low cost.

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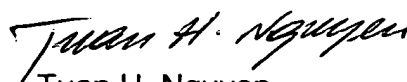
With respect to claim 6, it would have been obvious to one having ordinary skill in the art to adjust to HF concentration and current densities in the conventional lift-off process for optimizing the etching process to release the thin film.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nakagawa et al. is cited as of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is 571-272-1694. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan H. Nguyen  
Primary Examiner  
Art Unit 2813